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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,717	10/23/2001	Andre R. Abad	35718/237005 (5718-118)	5409
826 7590 10/24/2008 ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			EXAMINER KUBELIK, ANNE R	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 10/24/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/032,717

**Applicant(s)**

ABAD ET AL.

**Examiner**

Anne R. Kubelik

**Art Unit**

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,9-12,17-19,38,43,46,49,52 and 55-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,9-12,17-19,38,43,46,49,52 and 55-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. Claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 103***

3. Claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michaels et al (1996, US Patent 5,554,534). The rejection is repeated for the reasons of record as set forth in the Office action mailed 17 April 2008. Applicant's arguments filed 11 July 2008 have been fully considered but they are not persuasive.

The claims are drawn to nucleic acids with at least 90%, 93%, 94% or 95% identity to SEQ ID NO:1, wherein the nucleic acid encodes a protein with pesticidal activity for a pest of the order Coleoptera, including western corn rootworm, southern corn rootworm, Colorado potato beetle, and boll weevil. The claims are also drawn to plants, including maize and dicots, transformed with the nucleic acid and methods comprising transforming a plant with a construct comprising the nucleic acid operably linked to a plant promoter.

Michaels et al teach a nucleic acid with 85.1% identity to SEQ ID NO:1 (see search results); the nucleic acid encodes a protein with pesticidal activity toward the Coleopterans *Cyclocephala pasadenae*, *C. borealsis* and *Popillia japonica*. The protein has 79.8% identity to the instant SEQ ID NO:2, the protein encoded by the instant SEQ ID NO:1 (see search results). Michaels et al also teach plants transformed with constructs comprising the nucleic acid and a

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method of using it to impact a plant pest (column 15, line 5, to column 16, line 35). Michaels et al do not teach nucleic acids with at least 90%, 93%, 94% or 95% identity to SEQ ID NO:1.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the nucleic acid taught by Michaels et al to produce nucleic acids with at least 90%, 93%, 94% or 95% identity to the instant SEQ ID NO:1. One of ordinary skill in the art would have been motivated to do so because Michaels et al suggest making variant toxins with 75% homology to their protein (column 6, lines 26-67). These toxins would include those that are encoded by nucleic acids with at least 90%, 93%, 94% or 95% identity to the instant SEQ ID NO:1, given the sequence identity between the instant SEQ ID NO:1 and the nucleic acid taught by Michaels et al and the sequence identity between the instant SEQ ID NO:2 and the protein taught by Michaels et al. Further, one of ordinary skill in the art would have been motivated to make these toxins where they are pesticidal to western corn rootworm, southern corn rootworm, Colorado potato beetle, or boll weevil, given the economic impact of these pests on major crops like potato, corn and cotton. One of ordinary skill in the art would have been motivated to transform maize, potato and/or cotton with constructs comprising the variant nucleic acids operably linked to a plant promoter, to thus produce plants that have resistance to these pests. One of ordinary skill in the art would have been motivated to produce seeds from the corn and cotton plants, as this is how these plants, and many other crops, are sold to farmers. One of ordinary skill in the art would have been motivated to optimize expression of the nucleic acids for expression in a plant to get higher expression levels of the pesticidal protein in the plants.

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Applicant urges that in contrast to *Kubin*, the art was not in possession of a monoclonal antibody that can be used to isolate a protein encoded by the claimed sequences (response pg 3).

This is not found persuasive because a monoclonal antibody would not be required to make nucleic acids encoding variants of the protein taught by Michaels. All that would be required is knowledge of the structure of Cry endotoxins and of how to make amino acid and nucleotide substitutions. Both of these are well-established in the art. See the BPAI decision of 3 April 2008.

Applicant urges that '534 does not contain a prophetic example teaching how to isolate one of the claimed sequence, nor does it teach the isolation or construction of a sequence within the scope of the claims (response pg 3).

This is not found persuasive because all that would be required are methods routine in the molecular biology art, including those for making mutations.

### *Conclusion*

4. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, Ph.D., whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

October 25, 2008

/Anne R. Kubelik/

Primary Examiner, Art Unit 1638